



NOAA/NASA

2012 Global Temperatures

James E. Hansen



Director, NASA's Goddard Institute for Space Studies

Thomas R. Karl

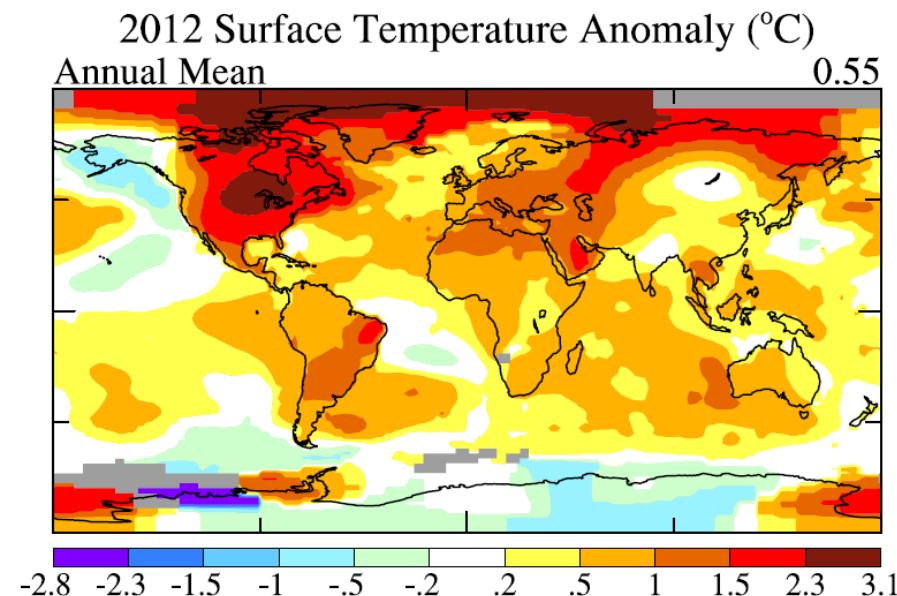
Director, NOAA's National Climatic Data Center



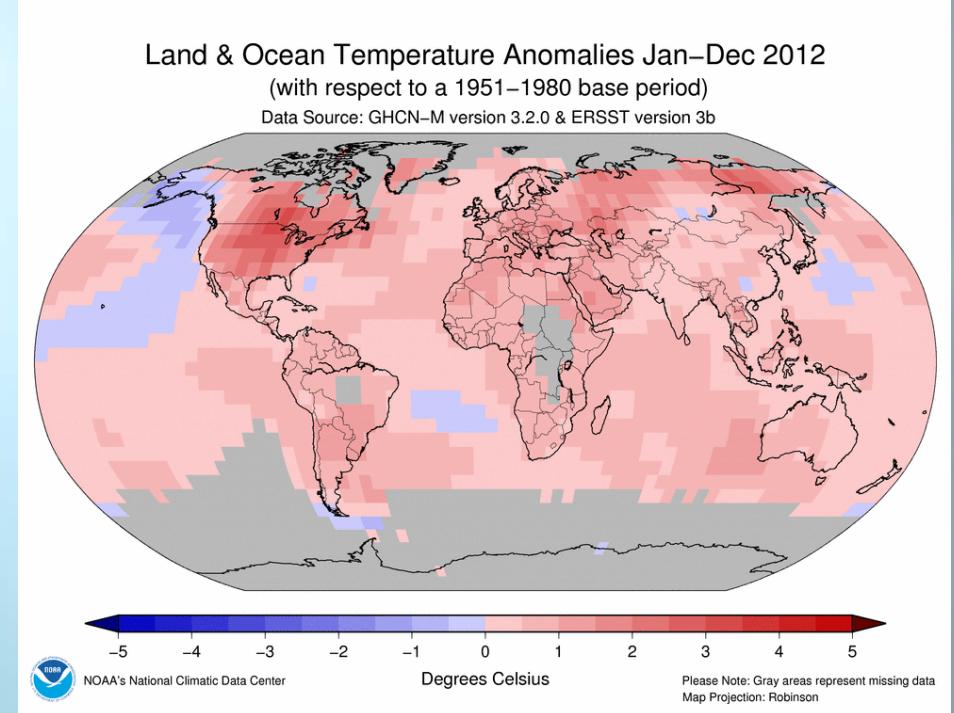
January 15, 2013

2012 Annual Temperature

NASA



NOAA



Anomaly (1951-80 base period): 0.53 $^{\circ}\text{C}$
Anomaly (20th Century average): 0.57 $^{\circ}\text{C}$

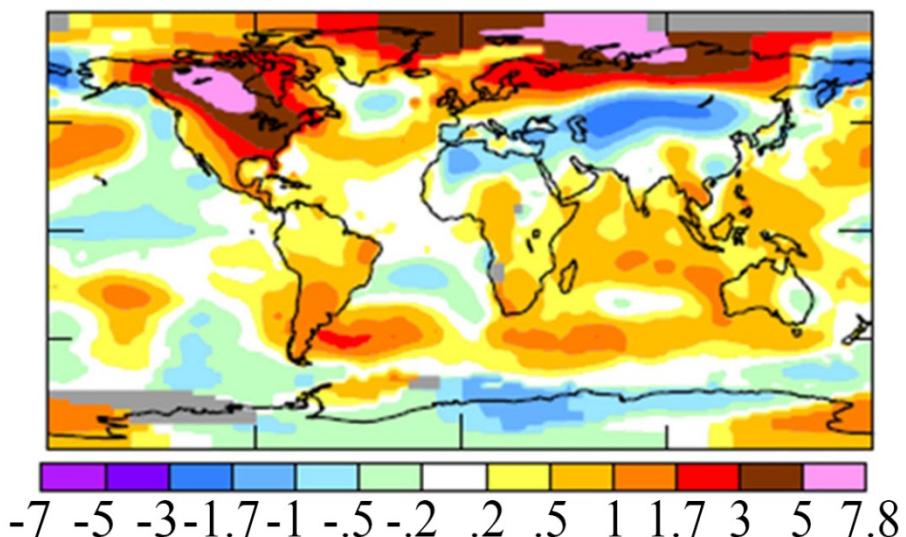


December 2011 – February 2012

NASA

Dec-Jan-Feb

0.40

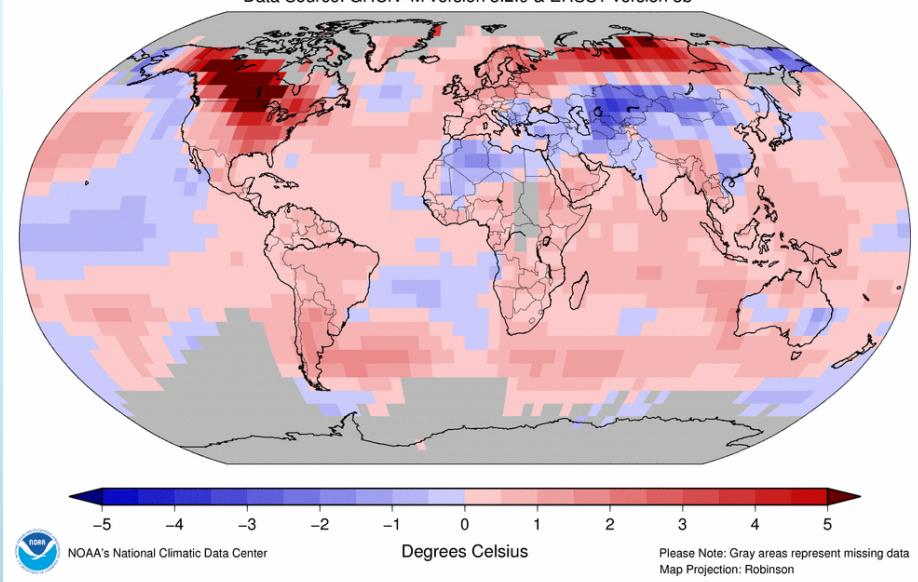


NOAA

Land & Ocean Temperature Anomalies Dec–Feb 2012

(with respect to a 1951–1980 base period)

Data Source: GHCN-M version 3.2.0 & ERSST version 3b



Anomaly (1951-80 base period): 0.38°C
Anomaly (20th Century average): 0.41°C

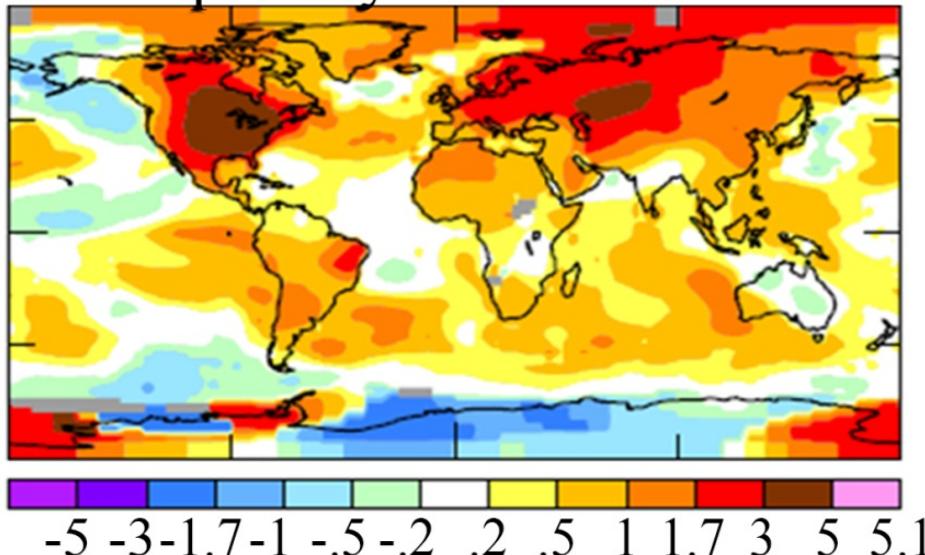


March – May 2012

NASA

Mar-Apr-May

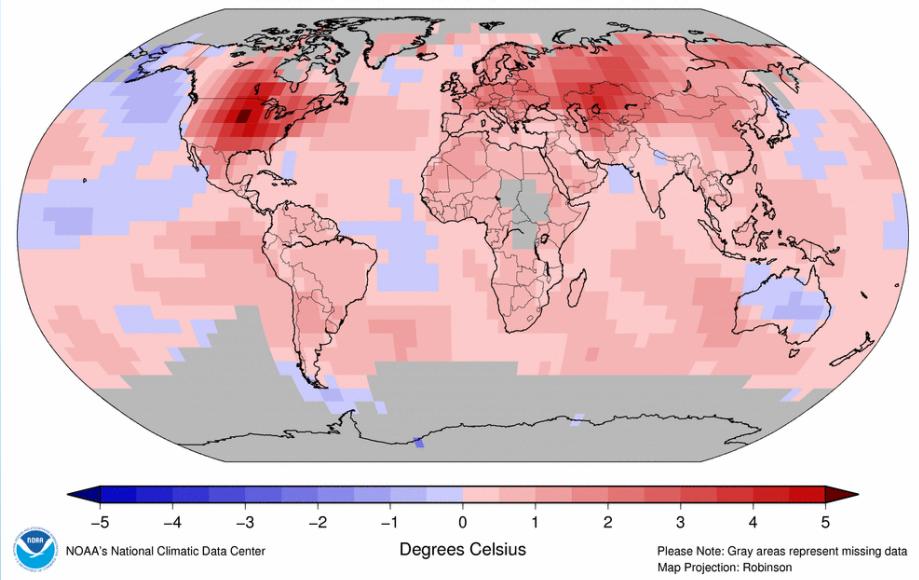
0.57



NOAA

Land & Ocean Temperature Anomalies Mar–May 2012
(with respect to a 1951–1980 base period)

Data Source: GHCN-M version 3.2.0 & ERSST version 3b

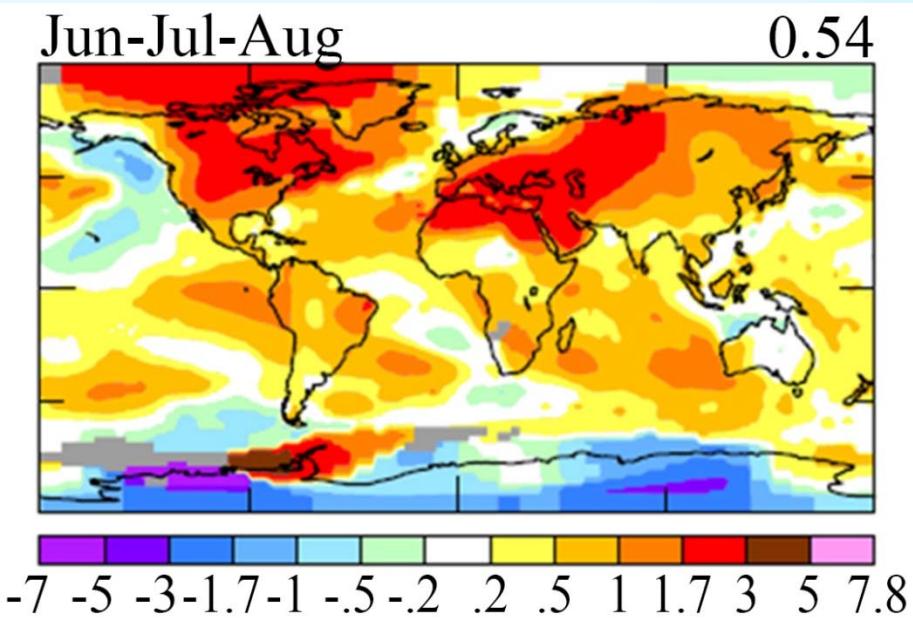


Anomaly (1951-80 base period): 0.56°C
Anomaly (20th Century average): 0.61°C

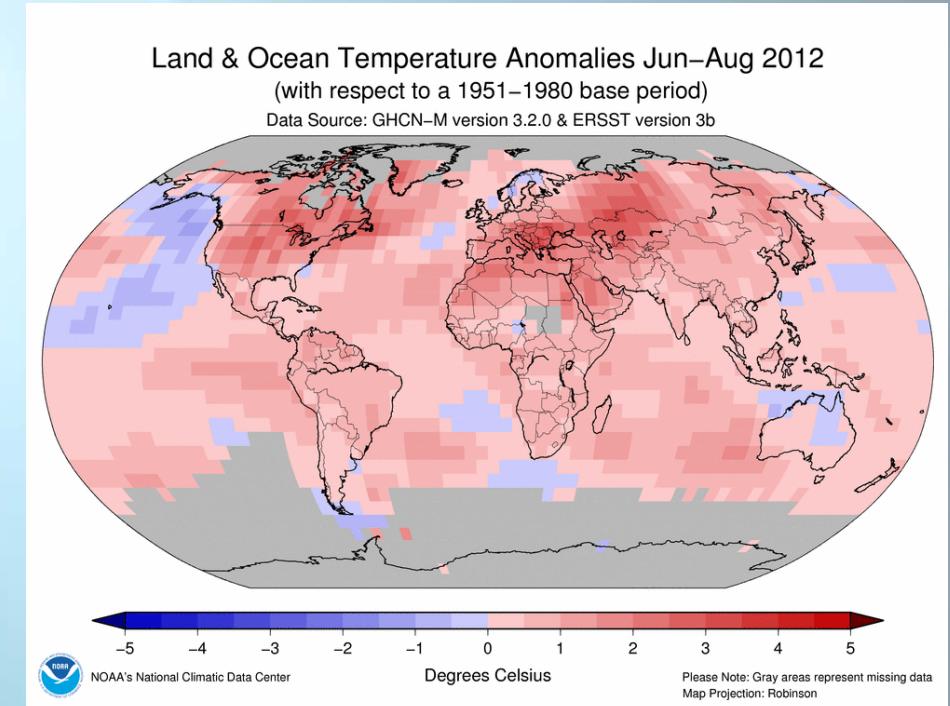


June – August 2012

NASA



NOAA



Anomaly (1951-80 base period): 0.58°C
Anomaly (20th Century average): 0.64°C

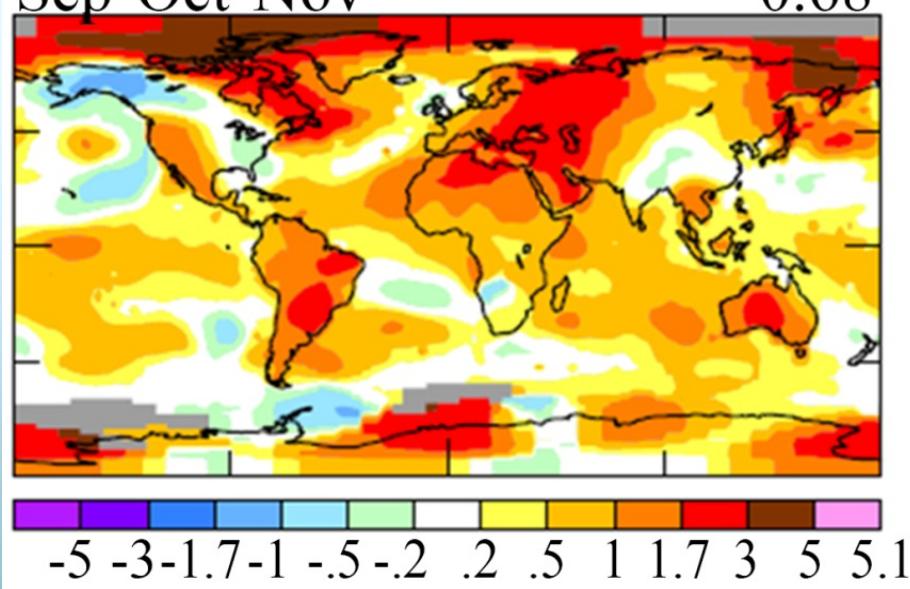


September – November 2012

NASA

Sep-Oct-Nov

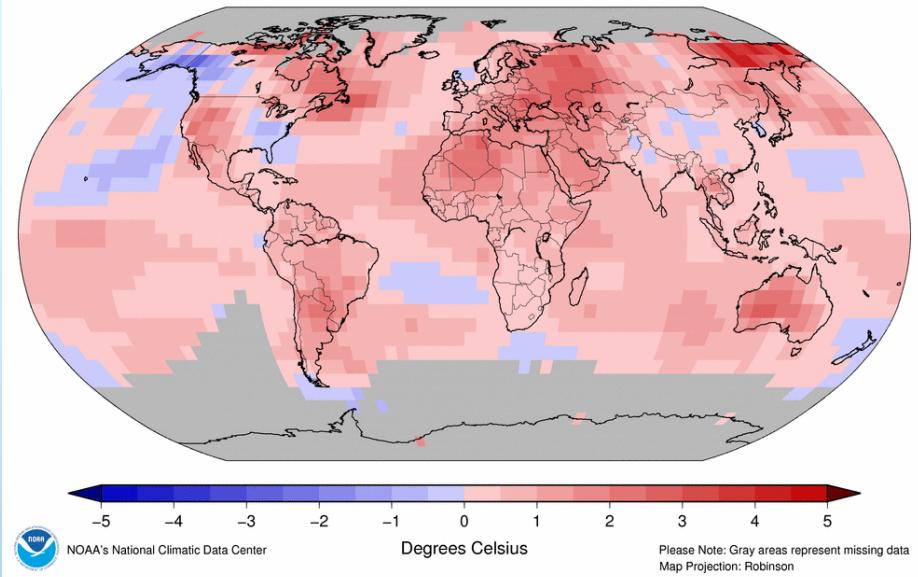
0.68



NOAA

Land & Ocean Temperature Anomalies Sep–Nov 2012
(with respect to a 1951–1980 base period)

Data Source: GHCN-M version 3.2.0 & ERSST version 3b



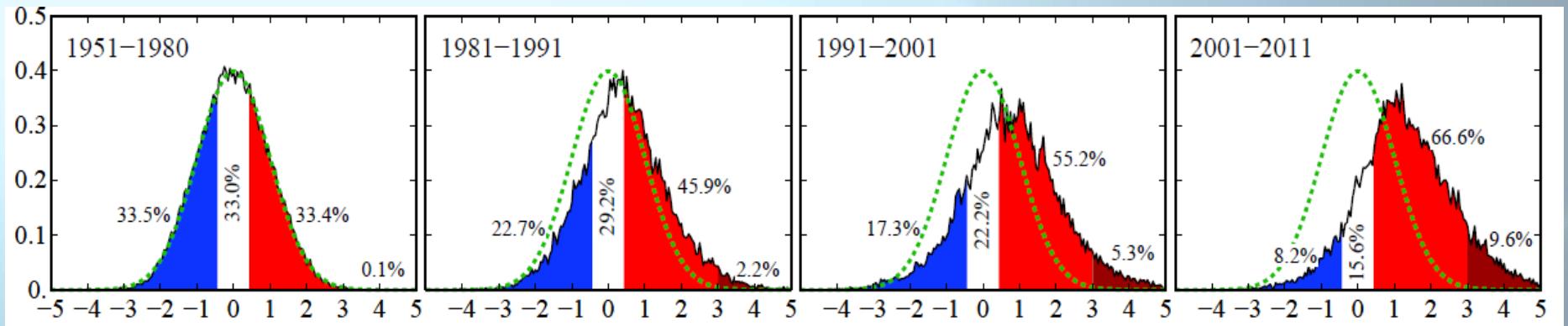
Anomaly (1951-80 base period): 0.62°C
Anomaly (20th Century average): 0.66°C



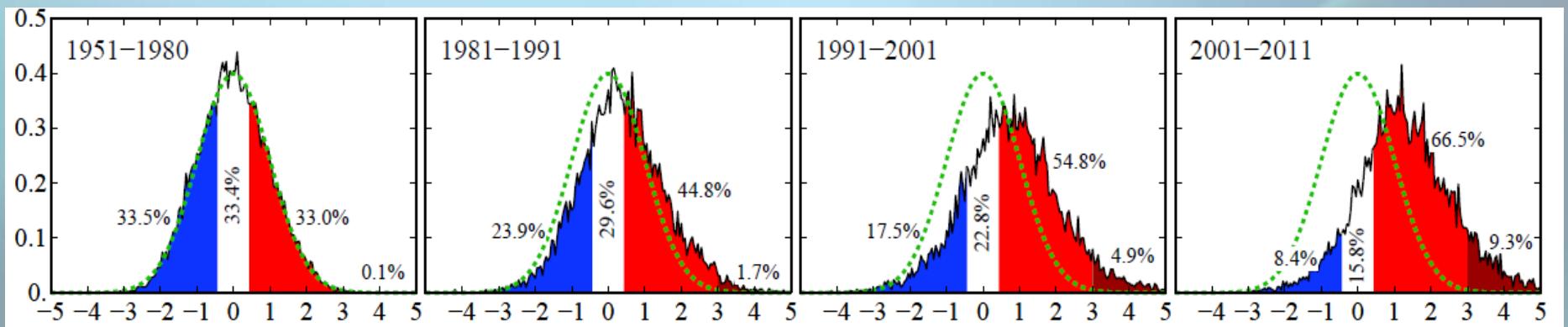
Northern Hemisphere Land Summer Temperature Anomalies

NASA

All Stations



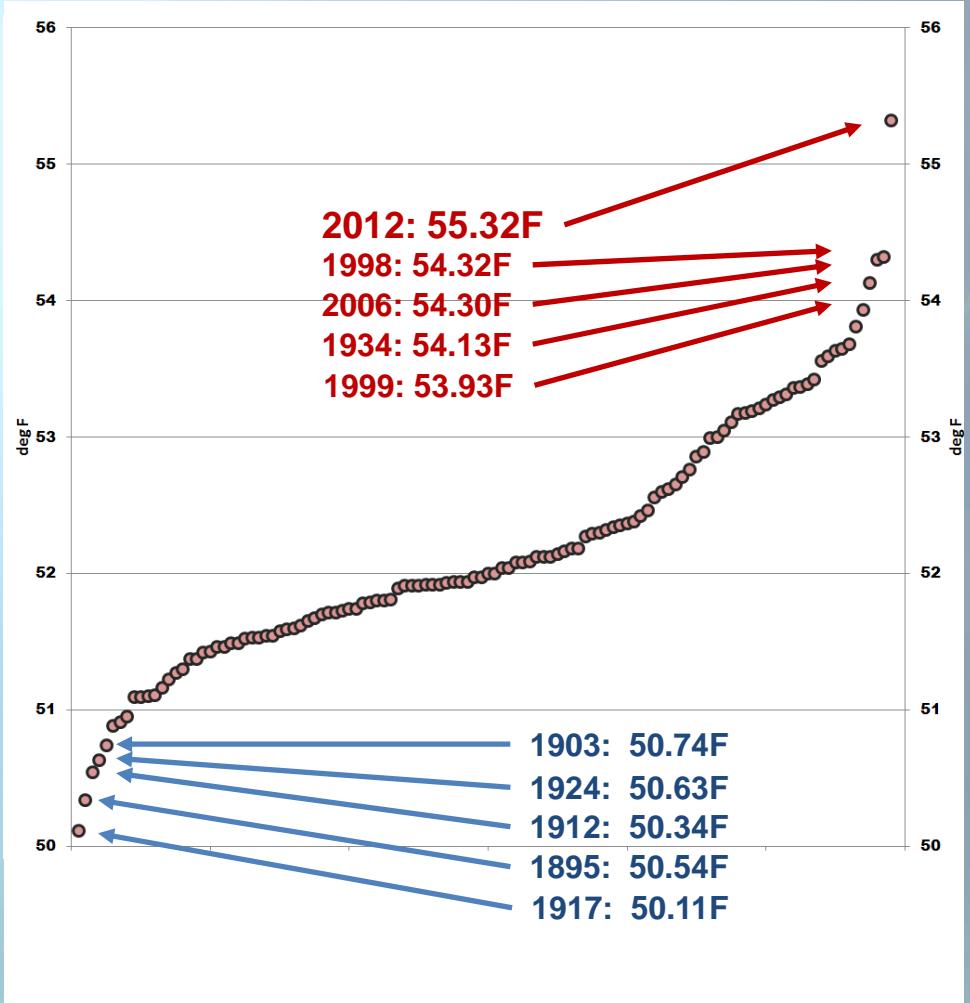
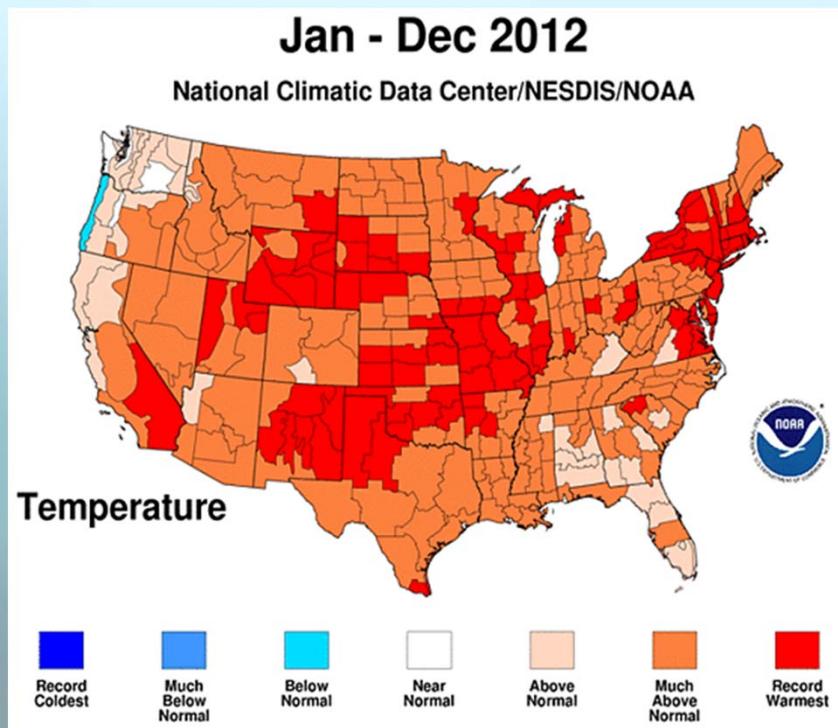
Limited Stations



Warmest Year on Record for the Continental U.S.

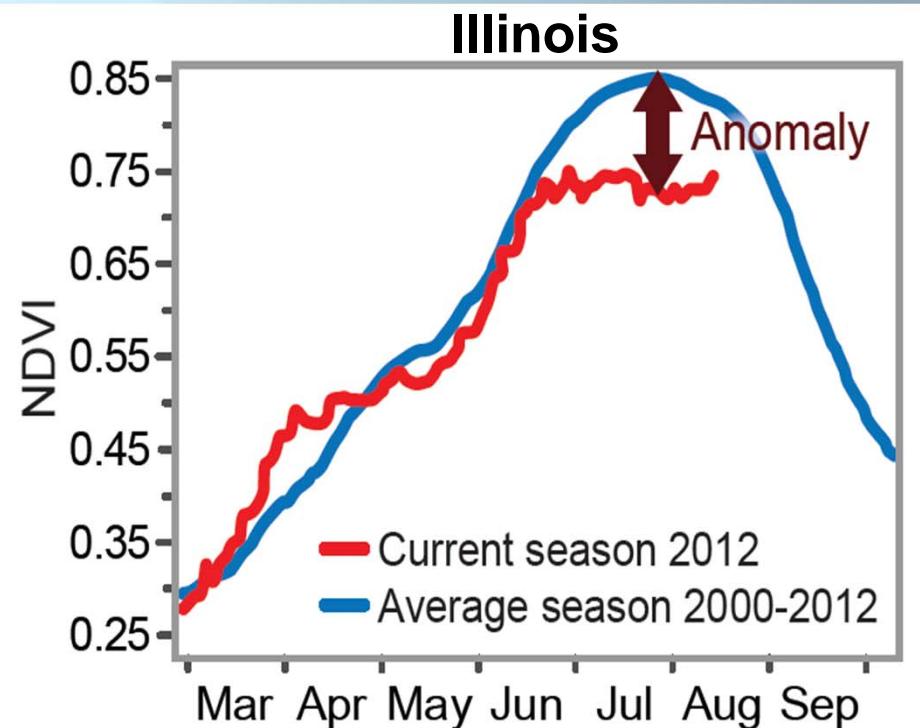
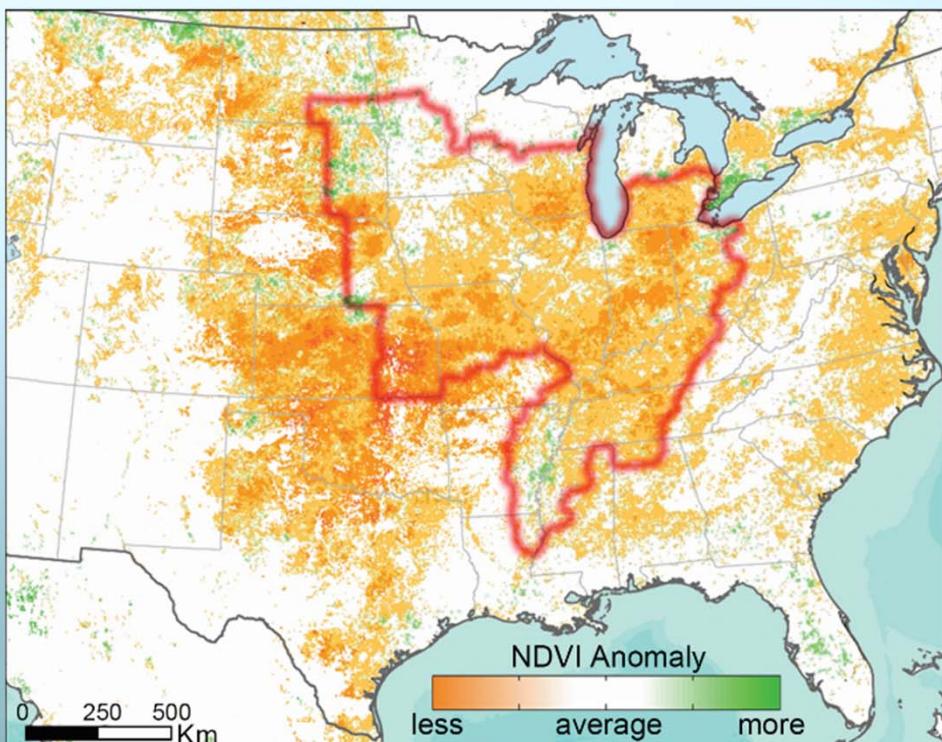
NOAA

- **3.25F** above 20th Century average



U.S. Drought of 2012

NOAA



From MODIS data.

Courtesy of I. Becker-Reshef, E. Vermote, M. Claverie and C. Justice, University of Maryland.

Karl et al, 2012 EOS



NOAA/NASA

Thank you

Questions?

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January 15, 2013